



body 119 advantageously allows low-resistivity and high-resistivity wafers to have unclamped operating temperatures that are within a narrow temperature range, thereby simplifying the electrostatic chuck's clamping requirements for temperature control. Furthermore, a reflective coating on an electrostatic chuck allows for higher wafer temperature at lower plasma power inputs. Schubert, on the other hand, discloses a substantially different chuck configuration.

Claim 1 is patentable over Schubert at least for reciting: "a body having a top surface configured to directly face a backside of a wafer," "an electrode buried in the body," and "a reflective metal coating over the top surface." According to the last office action, Schubert disclosed the limitations of claim 1 in FIG. 1, which is reproduced below.

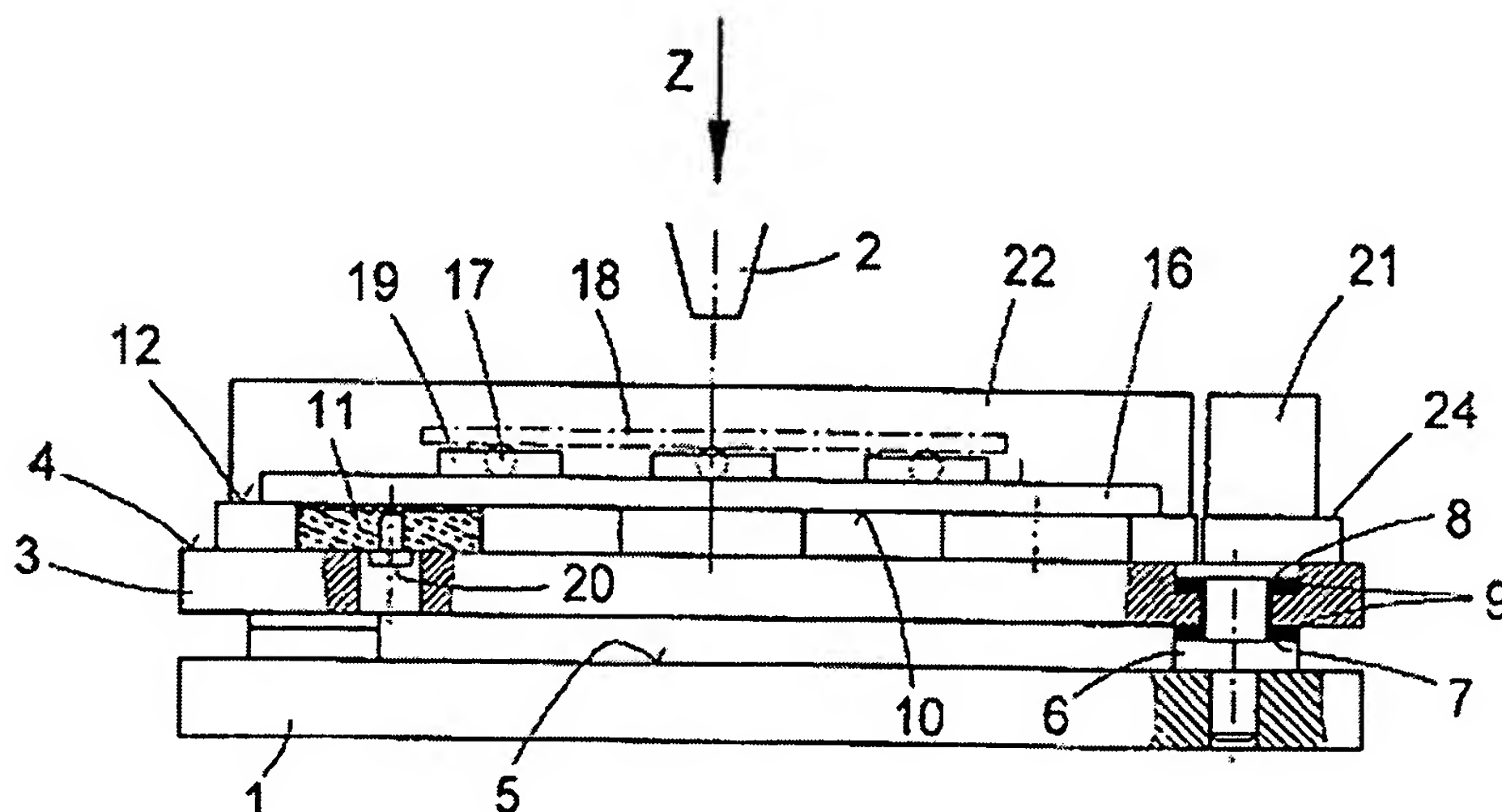


Fig.1

According to the last office action, Schubert discloses an electrostatic chuck in the form of arrangements 11, a body in the form of body 13, an electrode in the form of electrode 20, and a reflective coating in the form of conductive layer 14 and insulation layer 15. Schubert body 13 is shown in arrangements 11 of FIG. 5, which is reproduced below.

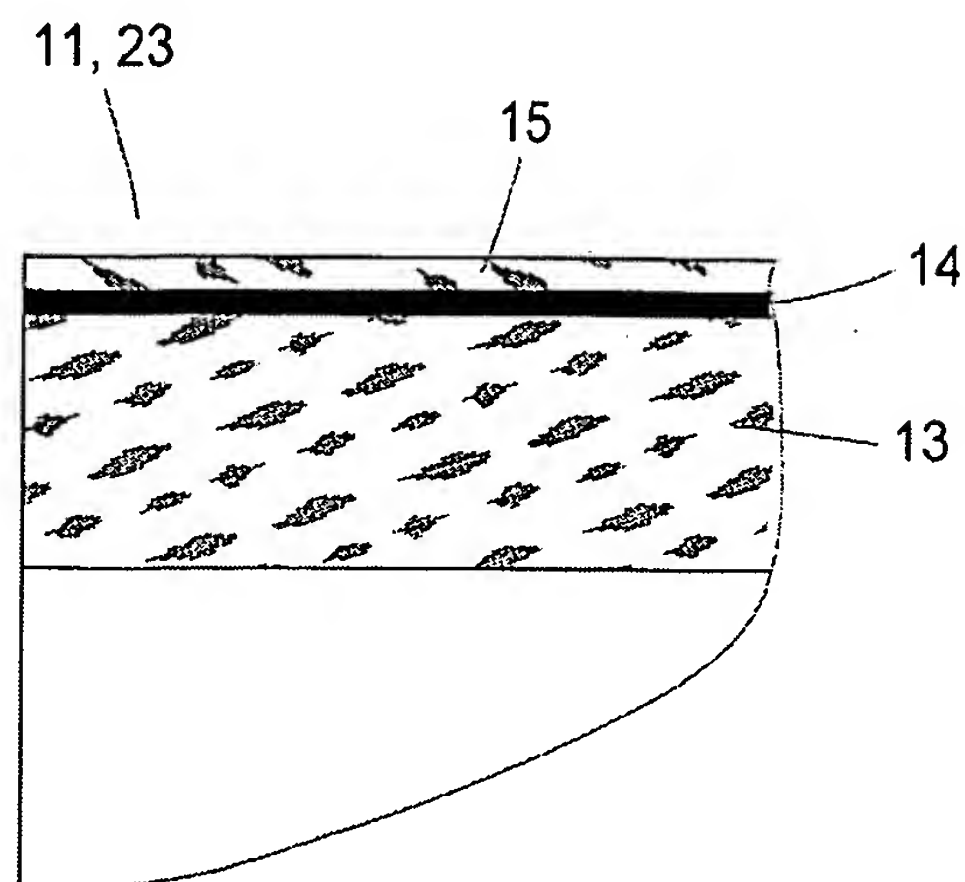


Fig.5

Schubert body 13 cannot possibly be the recited body of claim 1 because the top surface of Schubert body 13 does not and cannot directly face the backside of the substrate 18. This is because the mounting plate 16 is between the body 13 and the substrate 18. This is not surprising given that Schubert's chuck arrangements 11 are configured primarily to hold a replaceable mounting plate 16. Schubert implements this by coating the underside of the mounting plate 16 with conductive layer 10 (see bottom side of mounting plate 16 in Schubert FIG. 1), which forms a capacitor with the conductive layer 14 and insulator layer 15 (Schubert, col. 7, lines 8-14). Therefore, it is respectfully submitted that claim 1 is patentable over Schubert.

Claims 2, 3, 4, and 8 depend on claim 1 and are thus patentable over Schubert at least for the same reasons that claim 1 is patentable.

Claim 10 is patentable over Schubert at least for reciting: "reflecting heat from the backside of the wafer off a reflective coating and back onto the backside of the wafer." According to the last office action, "a reflective coating comprising a metal layer and a glass ceramics layer as disclosed by Schubert would necessarily reflect heat from the back side of the wafer." Applicant respectfully disagrees with this conclusion. Schubert does not pertain to chuck configuration to reflect heat back to a backside of a wafer. Accordingly, Schubert cannot do so because mounting plate 16 would **block** any heat

reflection off Schubert's conductive layer 14 and insulation layer 15 ("reflective coatings" on the top surface of body 13). That is, Schubert's conductive layer 14 and insulation layer 15 cannot reflect heat to the backside of substrate 18 because mounting plate 16 is in the way, which is not surprising given that Schubert is not addressing issues addressed by embodiments of the present invention.

Claims 11-13 depend on claim 10 and are thus patentable over Schubert at least for the same reasons that claim 10 is patentable.

Claim 16 is patentable over Schubert at least for reciting: "the top surface directly facing a backside of the wafer." As explained above in connection with claim 1, the top surface of Schubert's body 13 cannot **directly face** the backside of substrate 18 because the mounting plate 16 is in the way.

Claim 16 is also patentable over Schubert at least for reciting: "**a top surface integrally including raised portions** configured to contact a wafer." The last office action reads Schubert's balls 17 (see Schubert FIG. 1 above) as "raised contact points." Note, however, that balls 17 are not integral to body 13. Balls 17 are separated from the body 13 by the mounting plate 16. The top surface of body 13 is planar and does not integrally include raised portions to contact the wafer, as required by claim 16. Therefore, it is respectfully submitted that claim 16 is patentable over Schubert.

Claims 17 and 18 depend on claim 16 and are thus patentable over Schubert at least for the same reasons that claim 16 is patentable.

#### Claim Rejections -- 35 U.S.C. § 103

Claims 9, 5-7, 14, 15, 19, and 20 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Schubert in view of U.S. Patent No. 6,916,559 to Murakawa et al. ("Murakawa"). The rejection is respectfully traversed.

Claims 9 and 5-7 depend on claim 1, claims 14 and 15 depend on claim 10, and claims 19 and 20 depend on claim 16. The patentability of claims 1, 10, and 16 over Schubert has been explained above. Murakawa does not add to Schubert in regard to

claims 1, 10, and 16. Therefore, it is respectfully submitted that claims 9, 5-7, 14, 15, 19, and 20 are patentable over Schubert and Murakawa at least for depending on patentable base claims.

Claim 19 recites that "the reflective coating comprises two discontinuous sections corresponding to bipolar electrode regions buried in the body." The last office action rejects claim 19 without providing any evidence as to where the limitations of claim 19 can be found in the references of record except that these limitations are allegedly obvious. To the extent the last office action is taking an Official Notice, Applicants respectfully disagree as reflective coatings comprising two discontinuous sections corresponding to bipolar electrode regions buried in a body of an electrostatic chuck are not taught or suggested in the prior art or the references of record. Furthermore, it is not clear in the last office action how Schubert's layers 14 and 15 ("reflective coating") are discontinuous; they appear to be continuous layers, as evidenced in Schubert FIG. 5.

#### Conclusion

For at least the above reasons, it is believed that claims 1-20 are in condition for allowance. The Examiner is invited to telephone the undersigned at (408)436-2112 for any questions.

If for any reason an insufficient fee has been paid, the Commissioner is hereby authorized to charge the insufficiency to Deposit Account No. 50-2427.

Respectfully submitted,  
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